Normal Distributions

Let x be a random variable with a normal standard deviation. Use the area table for a standard curve to find each probability.

x	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
A(x)	0.000	0.079	0.155	0.226	0.288	0.341	0.385	0.419	0.445	0.464	0.477

13.) $P(x \geq 0.4)$ = 0.345 = 34.5%

.5 − .155

14.) $P(0.2 \leq x \leq 1.8)$ = .209 = 20.9%

P(.8) − P(.2)

.288 − 0.079

15.) $P(x \leq -1.4)$ = 0.081 = 8.1%

.5 − P(x ≤ 1.4)

.5 − 0.419

16.) $P(x \geq -0.8)$ = 0.788 = 78.8%

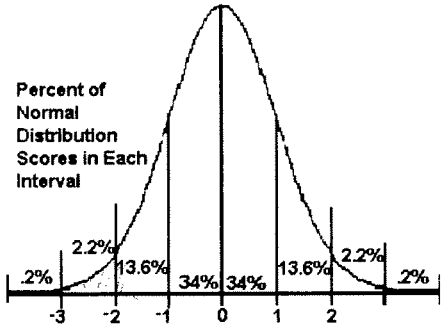
.5 + P(x ≥ 0.8)

.5 + 0.288

17.) $P(-0.2 \leq x \leq 0.2)$ = 0.158 = 15.8%

P(.2) + P(.2)

0.079 + 0.079



A city's annual rainfall is approximately normally distributed with a **mean of 40 inches** and a **standard deviation** of 6 inches. Find the probability (to the nearest thousandth) for each amount of rainfall. Hint: Draw the curve.

18.) less than 34 inches 16%

19.) greater than 52 inches 2%

20.) less than 28 inches 2%

21.) between 34 and 46 inches 68%